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**Sent:** Sat 8/4/2012 12:05:35 AM  
**Subject:** Fw: Climate change effects on likelihood of water year type (SJI and SVI)  
[CEC-500-2012-015.pdf](#)  
[Image.image003.png@01CD718C.AB06EB90.png](#)

See the paper attached in Obegi's email. We (meaning you) may want to contemplate what this means for our comments to the State Board. I think I agree that this factoid supports the idea of using PUF, but I think it may be broader than that.

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Subject: Climate change effects on likelihood of water year type (SJI and SVI)

(See attached file: CEC-500-2012-015.pdf)

Hey guys,

I wanted to pass on this new paper prepared for the State of California on the effects of climate change

on water year classifications. I believe this has substantial bearing on BDCP and the SWRCB's review of the Bay Delta WQCP (particularly over the longer term). Here's an excerpt of the abstract:

"Results vary by emissions scenario and global circulation model, but indicate that critically dry water years in the Sacramento Valley and San Joaquin Valley are expected to be about 8 percent and 32 percent more likely by the latter half of the twenty-first century, respectively, if water year type definitions remain unchanged. If current water year type thresholds are maintained, more years will be classified as dry and less water will be allocated for environmental outflows, perhaps failing to provide adequate hydrologic variability to support species, habitats, and ecosystems."

The graphs on pages 11-14 are not a pretty picture, with substantial changes already evident in the 2001-2050 period for the San Joaquin Index. Table 6 (reproduced below, from page 15 of the paper) shows the changes in the frequency of water year types over the 2001-2050 period and the 2051-2099 period:

[IMAGE]

In my opinion, this shifting baseline as a result of climate change is another good reason to move to using a percentage of unimpaired flows approach for delta outflow and other flow standards, rather than the current approach that varies based on water year type.

Hope this is helpful (albeit depressing).

Thanks,

Doug

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